TERRAMODEL NOTE 3
Loading Coordinate Survey Files

Objective:

The objective of this TM Note is to illustrate the process of loading an xyz coordinate file into TERRAMODEL software. Also, this TM Note contains a section describing the procedure used to create breaklines from point descriptors.

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TERRAMODEL Note 3 - Loading Coordinate Survey Files

A coordinate survey file is needed to follow this TERRAMODEL Note. TERRAMODEL Note 2 describes how such a file can be developed from a topographic survey. The file named **tutorial.pts** can be used to follow the loading process. If the user doesn't have this file, the points file for any project will work. The project file **breakline.pro** will be used when creating breaklines. The point loading process will include:

1. Loading a coordinate file into TERRAMODEL
2. Creating breaklines using point descriptors
3. Saving a project file

Before doing any of these steps, the user must open TERRAMODEL and create a new project.

<u>To create a new project:</u>

Choose [File]-[New Project] from the pull-down menu. This will bring up the New project dialog box.

Choose the appropriate directory to store the project in.

In the File name window, enter a meaningful filename for the project.

[Save]

1. Loading a Coordinate File

The coordinate file will be loaded with the Import command.

In the past, the user may have used a default input format of P N E Z 8D. The “8D” tells TERRAMODEL to read and store point descriptors (comments) with a length of 8 characters. TERRAMODEL for DOS could only handle 8 character descriptors. TERRAMODEL for Windows can handle comments up to 80 characters long. The SDR33 data collectors will accept 16 character descriptors, and the Ohio SSRP program will allow up to 33 character descriptors. Therefore, the author suggests specifying 35 character descriptors (P N E Z 35D). This way, the user should never run into the problem of loosing part of a descriptor.

To import a points file:

[File]-[Import] This will bring up the Import file dialog box.

Choose the directory where the points file is located, then choose the correct file either by highlighting it and hitting **[Open]**, or by double-clicking on the file name.

This will bring up the Import points dialog box.

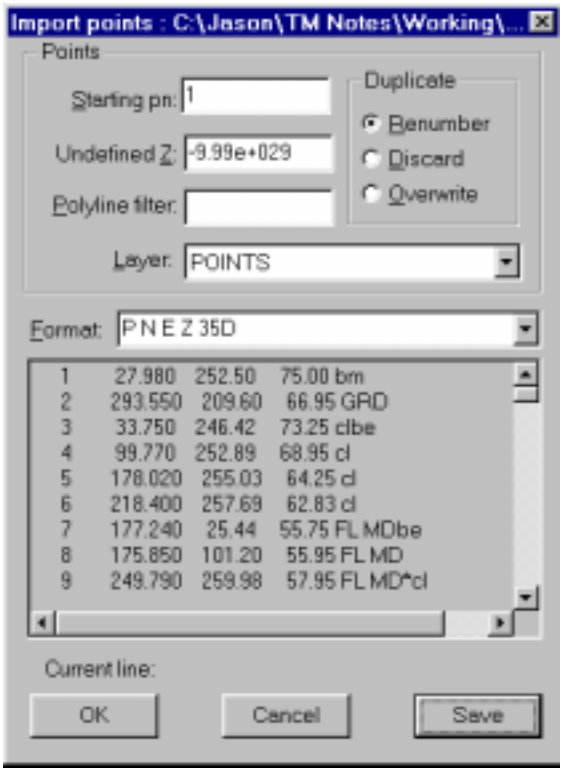

Figure 3-1

Choose the starting point number (use 1), the undefined elevation (the default value is fine), the layer that the points are to be stored on, and what to do with duplicate points (usually have them renumbered).

Note: Choosing 1 as the starting point number does not mean that the points will be renumbered beginning at 1. The starting point number is the first available point number that can be used. If the first point in the survey is point number 1000, then choosing the starting point number as 1 will leave that survey point as point number 1000. If the user chooses the starting point number as 5000, then all of the survey points that have a point number below 5000 will be renumbered. The only time user would change the starting point number to something other than 1 is if the user needs to import two or more different surveys into the same project file. In that case, the starting point number can be altered so that point numbers don't overlap between the surveys.

Choose the format for the points (usually P N E Z 35D).

Note: Be sure to choose the correct format. The user can see the points right there in the dialog box. If there are spaces separating the data (called tab delimited), then the format is P N E Z 35D (with spaces separating the letters). If there are commas separating the data (called comma delimited), then the format is P,N,E,Z,35D (with commas separating the letters).

Once the user has entered the correct format; hit **[Save]** in lower right portion of the dialog box. Hitting that button will make the P N E Z 35D format the default format.

[OK]

An Import points report will appear stating how many points were added, renumbered, etc.

On the Import points report dialog box; **[OK]**

The points may be concentrated in a small portion of the screen. The All command changes the display so the data points occupy the full screen.

[View]-[All]

Note: If the points do not represent the surveyed landscape and are a "mirror image", the points should be re-loaded with the N and E switched in the Format window of the Import points dialog box.

2. Creating breaklines using point descriptors

Note: The process of creating breaklines using point descriptors in TERRAMODEL for Windows is done after the file is already loaded. Therefore, this process could be covered in TM Note 4 (Contour Maps). However, The author is leaving this process in this TM Note because it was covered in this chapter in the TERRAMODEL for DOS notes. TM Note 4 describes the process of manually creating breaklines.

There are two main approaches to creating breaklines using point descriptors. The user can create all of the breaklines at once (by layer), or create the breaklines individually (by name). Both processes will be covered in this section of the note.

The user will need the drawing file **breakline.pro** to complete this section of the note. This file is a survey of a site where an existing road would be replaced with a dam. The benchmarks, centerline pins, instrument stations, and shots on the principal spillway pipe have been placed on their own layers.

Creating all of the breaklines at once

It may be a good idea for the user to print a list of the points and their descriptors to look at while going through this note.

To print a list of the point numbers and descriptors:

[Inquire]-[List]

On the List command bar; **[Points]**

Change the select control to Layer either by pressing “L” on the keyboard or by right-clicking anywhere in the drawing area and selecting Layer from the select control pop-up menu.

Choose the POINTS layer by left-clicking on any point in the drawing area that is in the POINTS layer.

On the command bar; **[Options]** This will bring up the Point listing options dialog box.

On the dialog box; disable all check boxes except for the Point number and Name checkboxes.

On the Point listing options dialog box; **[OK]**

On the command bar; **[List]** This will bring up a text editor displaying the desired information.

On the text editor; [File]-[Print]

After the list has printed: On the text editor; [File]-[Close]

To create the breaklines:

Note: For this survey, “be” and “en” were used to denote the beginning and end of a breakline. An asterisk (*) was used to denote breakline junctions.

[Draft]-[Linework from points]

Change the select control to Layer either by pressing “L” on the keyboard or by right-clicking anywhere in the drawing area and selecting Layer from the select control pop-up menu.

Choose the POINTS layer by left-clicking on any point in the drawing area that is in the POINTS layer.

On the command bar; **[Properties]** This will bring up the Map points properties dialog box.

In the Begin window; **be** (This is not case sensitive)

In the End window; **en** (This is not case sensitive)

In the Intersect window; ***

In the Ignore symbols window; **FE*** ↵ (These are case sensative)
GRD* ↵

Important: This tells the program to ignore the points that have codes beginning with the letters FE, and GRD. These correspond to fence shots and ground shots. Ignoring symbols like this (FE* and GRD*) will ignore the remainder of the line as well. For example, telling the program to ignore FE* would ignore FENCE, FENCE*FL, FE*FL, etc. Anything after the letters FE is ignored. If there are multiple codes for the same shot, the program will ignore all codes that appear after the ignored code. The user must be careful when naming points with multiple codes. The order of the coding will determine if the program uses a point to draw a breakline or not. For example, point 1047 is coded RB en*FE. The program will draw a breakline through this point because it was told to ignore the code FE and all following letters and codes (using the asterisk). It was not told to ignore the codes that appear before the code FE (which would happen with *FE*). If point 1047 was coded FE*RB en, the program would not draw a breakline through the point because it was told to ignore points coded FE and ignore all following letters and codes (FE*). The user may need to experiment with this in order to determine the best way to code shots while surveying.

On the dialog box; **[OK]**

On the command bar; **[Create]**

Figure 3-2

Warning: The user must inspect every breakline to make sure that it was drawn correctly. The user needs to make sure that no points were omitted from a breakline and that no breaklines cross each other. Breaklines can intersect at a junction, but they can't cross.

Notice that in the lower right portion of the pond, breaklines cross. Also, there are a few areas on the map (near the culvert under the road) where portions of the flowline are missing. Displaying the TIN (Triangulated Irregular Network) may help the user determine where breaklines are incorrect. Refer to TM Note 4 (Contour Maps) for instructions on editing breaklines and displaying the TIN.

Creating breaklines individually (by name)

For this section, the user will again need the file **breakline.pro**. The user can download the file again, or simply erase the breaklines created in the previous section.

To create the breaklines:

[Draft]-[Linework from points]

Change the select control to Name either by pressing "N" on the keyboard or by right-clicking anywhere in the drawing area and selecting Name from the select control pop-up menu.

Left-click on the button just to the right of the select control window. This will bring up the Select by name dialog box.

In the mask window; ***FL*** (This is case sensative)

Note: This tells the program to select all of the points that have the code FL anywhere in the descriptor. For example, if the user entered the mask *FL*, the program would select points with descripors like FL, FL*FE, and FE*FL.

On the Select by name dialog box; **[OK]**

On the command bar; **[Properties]** This will bring up the Map points properties dialog box.

In the Begin window; **be** (This is not case sensitive)

In the End window; **en** (This is not case sensitive)

In the Intersect window; ***

The Ignore symbols window should be blank.

On the command bar; **[Create]**

That will have created the breaklines along the flowlines. The remaining breaklines (WW1, WW2, POND, UPTOE, UPSHOULD, CL, DNTOE, and DNSHOULD) can be created in the same way. Be sure to put asterisks before and after the code when entering the mask in the Select by name dialog box.

Again, the user must inspect every breakline to make sure that they were drawn correctly.

Note: The Linework from points command creates set lines which will act as breaklines. If the user wants to use this command to connect points that are not to be breaklines (such as fence or phone lines), the set lines will have to be converted to polylines. This is done using the [Edit]-[Convert] command which was discussed in TM Note 1.

3. Saving the Project File

The points can be saved as a project file for future manipulation and processing. The Save command will save the job in the directory chosen by the user and by the name entered by the user when creating the new project.

[File]-[Save Project]